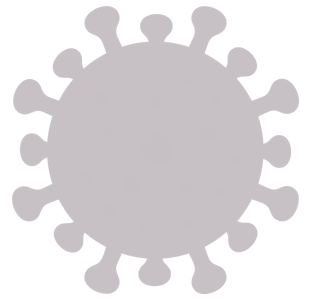
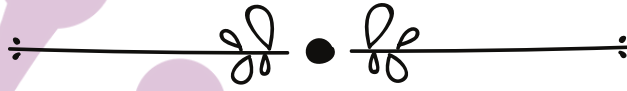


BIOHACK NOTES



MICROBES IN HUMAN WELFARE

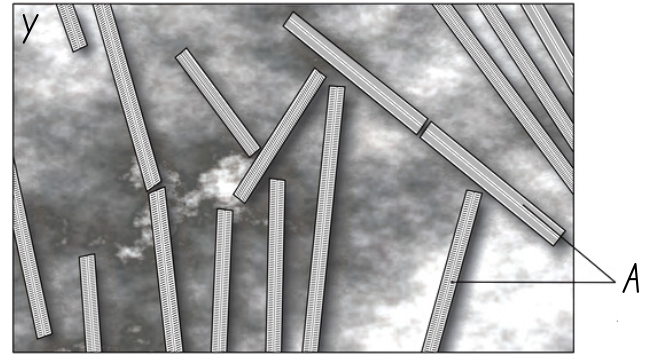
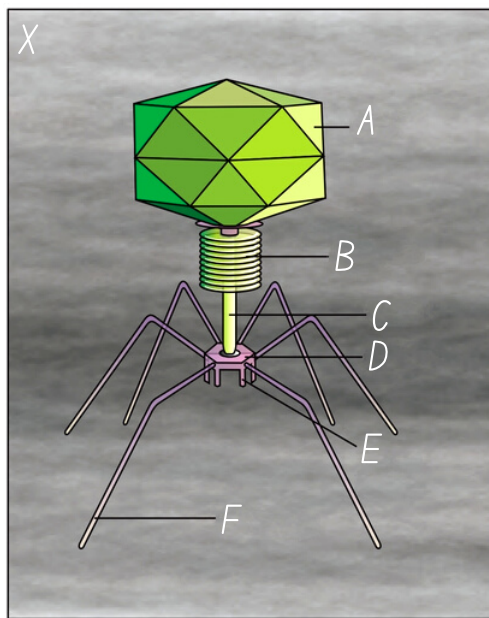
- BASED ON ACTIVE RECALL AND SPACED REPETITION
- TARGET 360/360 IN NEET BIOLOGY & 100/100 IN BOARDS!



PARTH GOYAL
BIOGAS



DigaQ. 1



• MICROBES IN HOUSEHOLD PRODUCTS

1. _____ are the proteinaceous infectious agents.
2. _____ bacteria is used for the production of curd. (NEET)
3. LAB full form -
4. Curd has more nutritional quality than milk because it has _____. (NEET)
5. LAB plays a very beneficial role in checking disease causing microbes. T/F
6. The puffed appearance of dough is due to -
7. *Saccharomyces cerevisiae* is also called - (2) (NEET)
8. _____ is a traditional drink in south india.
9. It is made by fermenting _____ from _____
10. Large holes are present in _____ cheese due to production of large amount of _____. (NEET)
11. Swiss cheese is formed by the bacteria _____ (NEET)
12. _____ cheese is ripened by growing a specific fungi on them. (NEET)



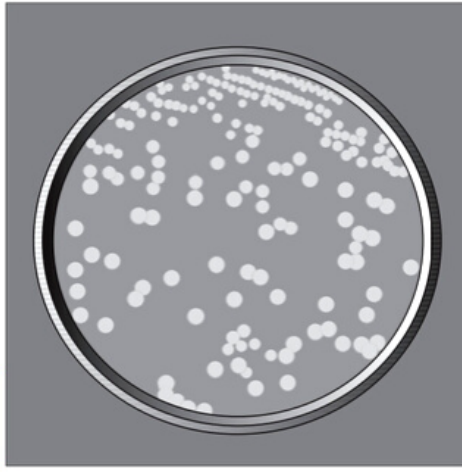
• MICROBES IN INDUSTRIAL PRODUCTS

13. Yeast is used to form beverages. T/F (NEET)
14. Ex. of beverages formed by yeast. (5)
15. What is Malt ?
16. Brewer's yeast is used to ferment _____ and _____ to produce ethanol. (NEET)
17. Alcoholic drinks produced without distillation - (2)
18. Alcoholic drinks produced with distillation - (3)
19. _____ was the first antibiotic to be discovered. (NEET)

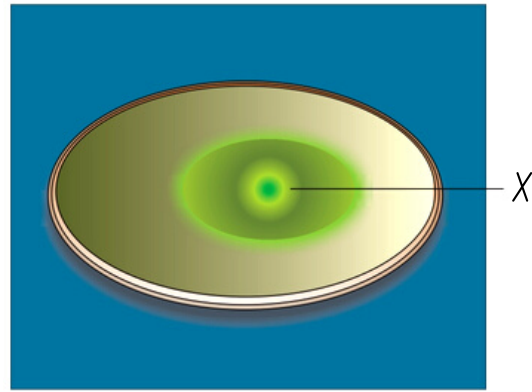


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DigaQ. 2



DigaQ. 3



20. _____ was working on _____ (bacteria), noticed that the bacteria was not able to grow because of _____ (fungi). (NEET)

21. The full potential of penicillium as an antibiotic was established by two scientist namely -

22. The antibiotic was used to treat American soldiers wounded in World War I. T/F

23. Fleming, Chain and Florey were awarded the Nobel Prize in year _____

24. Kali khansi english name -

25. Diphtheria hindi name -

26. Kusht rog english name -

27. *Aspergillus niger* produce _____ acid. (NEET)

28. *Acetobacter aceti* is a bacterium/fungi. (NEET)

29. *Acetobacter aceti* produce _____ acid. (NEET)

30. _____ produce butyric acid. (NEET)

31. _____ produce lactic acid. (NEET)

32. Lipases are used in _____ and help in removing _____ from the laundry. (NEET)

33. Bottle juice are clarified using _____ and _____ (NEET)

34. _____ produced by *Streptococcus* is used as a _____ (NEET)

35. _____ is used as a immunosuppressive agent in organ-transplant patients. (NEET)

36. It is produced by fungus _____

37. Statin are produced by the bacteria/fungus _____ (NEET)

38. Statin competitively/non-competitively inhibit enzyme responsible for synthesis of cholesterol.



• MICROBES IN SEWAGE TREATMENT

39. Municipal waste water is also called _____

40. STP full form -

41. Treatment of waste water is done by autotrophic/heterotrophic microbes naturally present in sewage.



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42. Primary treatment means physical/chemical removal of particles through _____ and _____ (NEET)

43. Floating debris is removed by _____

44. Grit is removed by _____

45. All solids that settle form _____ and the supernatant form _____

46. Secondary treatment is called chemical/biological treatment. (NEET)

47. What are flocs ?

48. Flocs are mesh like. T/F

49. Define BOD (NEET)

50. BOD is a measure of _____ present in the water. (NEET)

51. "Flocs" when sediment form _____

52. The activated sludge is pumped into _____ and _____ (NEET)

53. In anaerobic sludge digester's bacteria produces gases- (3) (NEET)

54. Ministry of _____ and _____ has initiated 2 plans to save major rivers of our country. Name the plans.



• MICROBES IN BIOGAS PRODUCTION, AS BIOCONTROL AGENTS & BIOFERTILLISERS

55. Biogas predominantly contain _____ gas. (NEET)

56. Ex of methanogen - (1) (NEET)

57. Bacteria found in anaerobic sludge digesters -

58. Methanogens are present in (2) (NEET)

59. Biogas tank in ____-____ feet deep.

60. The technology of biogas production was developed in India mainly due to the efforts of _____ and _____

61. IARI and KVIC full form -

62. Beetle with red and black markings -

63. Ladybirds are useful to get rid of _____ (NEET)

64. Dragonflies are useful to get rid of _____ (NEET)

65. Butterfly caterpillars are controlled by the bacteria _____ (NEET)

66. _____ are effective biocontrol agents for several plant pathogens. (NEET)

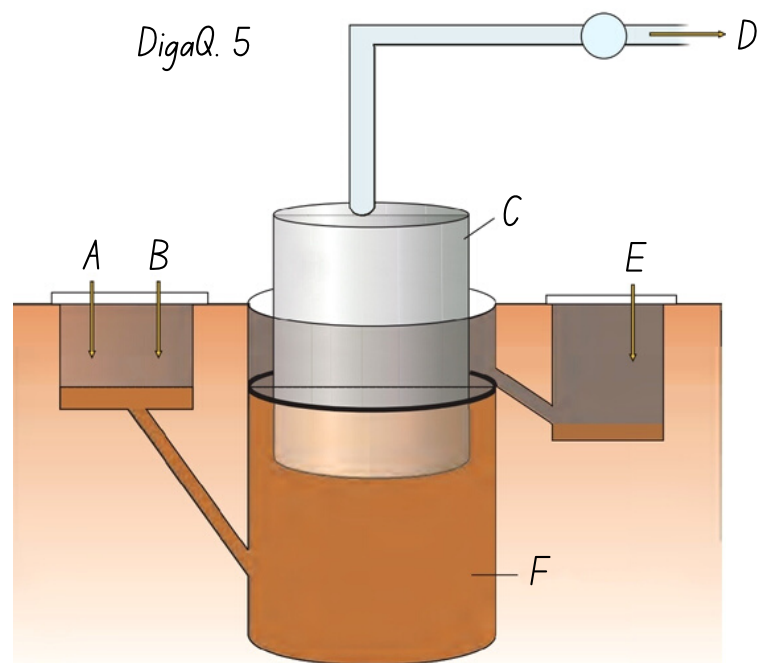
67. Trichoderma are symbiotic/free-living fungi and very common in shoot/root ecosystems. (NEET)

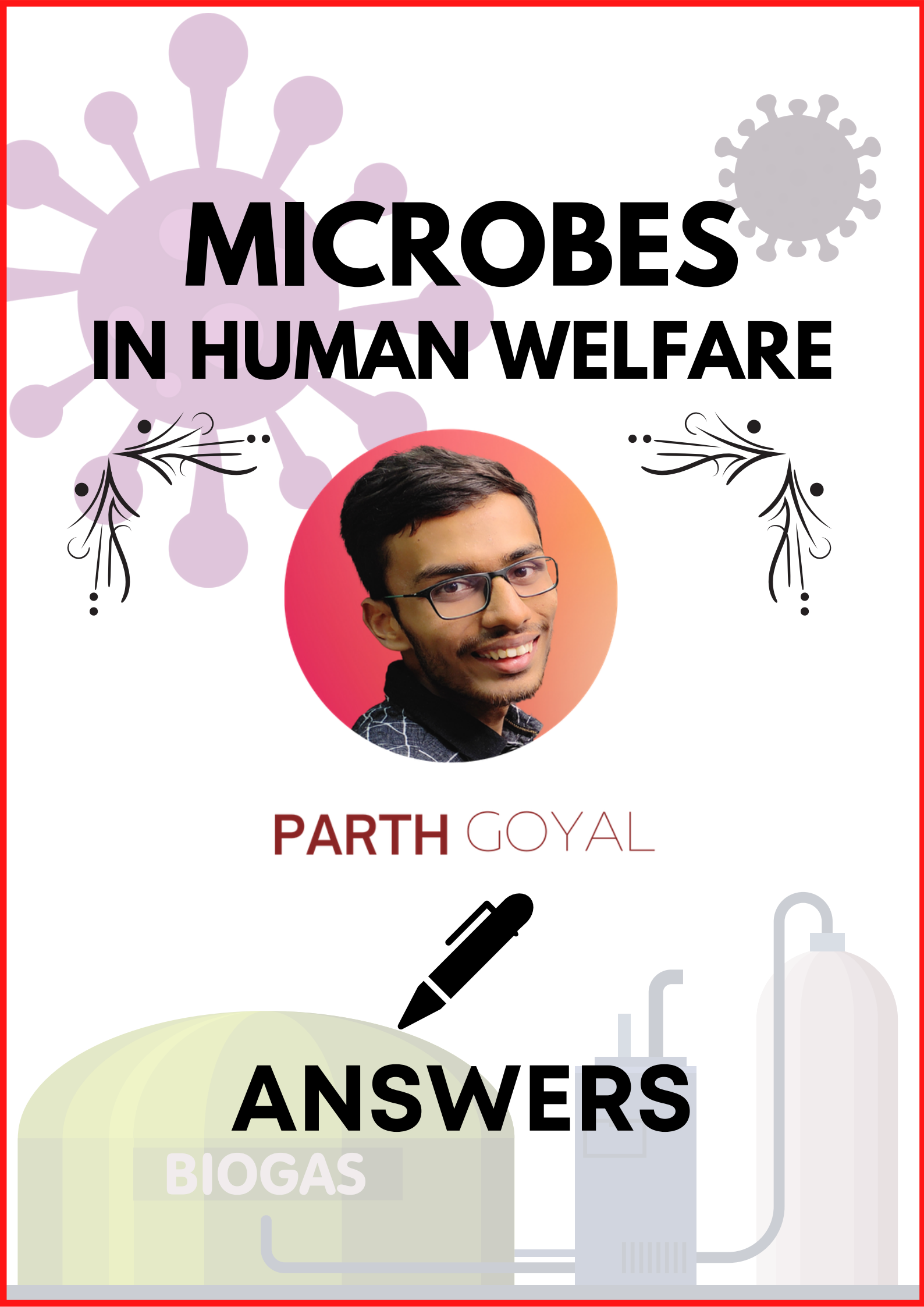
68. _____ are pathogens that attack insects and other arthropods.



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69. Majority of baculoviruses used as biological control agents are in the genus _____ (NEET)
70. These viruses are excellent candidates for broad spectrum insecticidal application. T/F
71. These viruses have no negative impact on plants, mammals, birds. T/F
72. IPM full form -
73. The main sources of biofertilizers are - (3) (NEET)
74. Leguminous plant symbiotically associated with - (NEET)
75. Bacteria who fix nitrogen in free-living conditions are - (2) (NEET)
76. Members of genus _____ form mycorrhiza. (NEET)
77. Glomus is a genus of plant. T/F
78. In mycorrhiza, fungus absorb _____ and deliver it to plants.
79. Tolerance to salinity and drought can be brought up by mycorrhiza. T/F
80. Cyanobacteria are autotrophic/heterotrophic. (NEET)
81. Ex. of cyanobacteria who fix nitrogen - (3) (NEET)
82. In _____ fields, cyanobacteria serve as an important biofertilizer.



The book cover features a large purple virus-like microbe in the top left, a smaller grey one in the top right, and two black branching microbe structures on the left and right sides. In the center is a circular portrait of a smiling man with glasses. The bottom section shows a green dome labeled 'BIOGAS' with a black pen icon above it, and a grey industrial machine with a tall tank on the right.

MICROBES IN HUMAN WELFARE

PARTH GOYAL

ANSWERS

BIOGAS

• HOUSEHOLD PRODUCTS

1. Prions
2. Lactobacillus
3. Lactic acid bacteria
4. Vitamin B₁₂
5. T
6. CO₂
7. Baker's yeast and brewer's yeast
8. Toddy
9. Sap from palms
10. Swiss, CO₂
11. Propionibacterium sharmanii
12. Roquefort

• INDUSTRIAL PRODUCTS

13. T
14. wine, beer, whisky, brandy or rum
15. It is the germinated cereal grains that have been dried in a process known as "Malting".
The grains are made to germinate by soaking in water and are then halted from germinating further by drying out. Malting grain develops the enzyme required for modifying the grain's starch into various types of sugar.
16. Malted cereals and fruit juices
17. Wine and beer
18. Whisky, brandy and rum
19. Penicillin
20. Alexander Fleming, Staphylococci, Penicillium notatum
21. Ernest Chain and Howard Florey
22. F, in WWII
23. 1945
24. Whooping cough
25. Gal ghotu
26. Leprosy
27. Citric

28. Bacteria
29. Acetic
30. Clostridium butylicum
31. Lactobacillus
32. Detergent formulations, oily stains
33. Pectinases, proteases
34. Streptokinase, clot buster
35. Cyclosporin A
36. Trichoderma polysporum
37. Fungus, Monascus purpureus
38. Competitively

• SEWAGE TREATMENT

39. Sewage
40. Sewage treatment plant
41. Heterotropic
42. Physical, filtration and sedimentation
43. Sequential filtration
44. Sedimentation
45. Primary sludge, effluent
46. Biological
47. masses of bacteria associated with fungal filaments
48. T
49. It refers to the amount of the oxygen that would be consumed if all the organic matter in one liter of water were oxidised by bacteria.
50. Organic matter
51. Activated sludge
52. Aeration tanks, anaerobic sludge digesters
53. Methane, hydrogen sulphide, carbon dioxide
54. Environment and Forests, Plans - GAP - Ganga Action Plan, YAP - Yamuna Action Plan



PARTH GOYAL

• BIOGAS PRODUCTION, BIOCONTROL & BIOFERTILLISERS

- 55. Methane
- 56. Methanobacterium
- 57. Methanogens
- 58. Anaerobic sludge digesters and rumen of cattle
- 59. 10-15
- 60. IARI & KVIC
- 61. Indian Agricultural Research Institute (IARI) & Khadi and Village Industries Commission (KVIC)
- 62. Ladybird
- 63. Aphids
- 64. Mosquitos
- 65. *Bacillus thuringiensis*
- 66. *Trichoderma*
- 67. Free-living, root
- 68. Baculoviruses
- 69. Nucleopolyhedrovirus
- 70. F, narrow
- 71. T
- 72. Integrated pest management
- 73. bacteria, fungi and cyanobacteria
- 74. *Rhizobium*
- 75. *Azotobacter* and *azospirillum*
- 76. *Glomus*
- 77. F, a fungi
- 78. Phosphorus

79. T

80. Autotrophic

81. *Anabaena*, *Nostoc*, *Oscillatoria*

82. paddy

• DigaQs

DigaQ. 1 – Viruses

X – Bacteriophage

A – Head

B – Collar

C – Tail

D – Plate

E – Pins

F – Prongs

Y – Rod-shaped TMV

A – Compact rod-shaped viruses

DigaQ. 2 – Colonies of bacteria in a petri dish

DigaQ. 3 – Fungal colony in a petri dish

X – Fungal colony

DigaQ. 4 – Secondary treatment

DigaQ. 5 – Biogas plant

A – Dung

B – Water

C – Gas holder

D – Gas

E – Sludge

F – Digester



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